Amendment to the Claims

1 – 27 (Canceled).

28 (Withdrawn). An optical network, comprising:

a plurality of connected devices, each of said plurality of devices operable to perform at least one of adding wavelengths within the network, dropping wavelengths within the network, regenerating wavelengths within the network, and providing for the passage of wavelengths therethrough;

a first of said plurality of connected devices operable to insert a wavelength within the network and send it to a second of said plurality of connected devices, and said first of said plurality of connected devices is further operable to send information related to the inserted wavelength to the second of said plurality of connected devices;

said information related to the inserted wavelength including data identifying the inserted wavelength and the identification of the first of said plurality of connected devices; and

said second of said plurality of connected devices operable to insert a wavelength within the network, and further operable to make a determination if the inserted wavelength by the second of said plurality of connected devices is equal to the wavelength inserted into the network by said first of said plurality of connected devices, wherein said second of said plurality of connected devices determines the wavelength inserted into the network by said first of said plurality of connected devices is a passthrough wavelength for the second of said plurality of devices when the inserted wavelengths are not equal.

29 (Withdrawn). The optical network as recited in claim 28, wherein said second of said plurality of connected devices further operable to make a determination if a connection with said first of said plurality of connected devices is a cross-connection.

30 (Withdrawn). The optical network as recited in claim 29, wherein said second of said plurality of connected devices further operable to provide for the passage of the wavelength received from said first of said plurality of connected devices to a third of said plurality of connected devices.

31 (Withdrawn). The optical network as recited in claim 30, wherein said second of said plurality of connected devices is further operable to provide for the passage of said information related to the inserted wavelength of the first of said plurality of connected devices to said third of said plurality of connected devices.

32 (Currently Amended). An optical network element in an optical network, comprising:

a plurality of transponders for generating wavelengths ~~to be~~ transmitted in a first direction ~~by the network element~~ to an adjacent network element over the optical network;

a dedicated overhead wavelength channel for receiving a wavelength topology map from the adjacent network element in the optical network, wherein the wavelength topology map includes a ~~first~~ map portion that specifies the wavelengths being transmitted by the adjacent network element in a second direction to the network element;

wherein said optical network element is operable to determine passthrough wavelengths from the wavelength topology map.

33 (Previously Presented). The optical network element of claim 32, wherein said network element is operable to determine passthrough wavelengths from the wavelength topology map and from the wavelengths transmitted in a first direction by the network element.

34 (New). The optical network element of claim 33, wherein the network element is operable to determine passthrough wavelengths in response to the wavelengths transmitted in a first direction by the network element are not equal to the wavelengths specified in the wavelength topology map being transmitted by the adjacent network element in a second direction to the network element.

35 (New). The optical network element of claim 33, wherein the network element is operable to determine passthrough wavelengths in response to the wavelengths being dropped from a second direction by the network element are not equal to the wavelengths specified in the wavelength topology map being transmitted by the adjacent network element in a second direction to the network element.

36 (New). A method for determining passthrough wavelengths in an optical network element in an optical network, comprising:

receiving a first wavelength topology map from the first adjacent network element in the optical network over a dedicated overhead wavelength channel, wherein the first wavelength topology map includes a first map portion that specifies the wavelengths being transmitted by the first adjacent network element in a first direction to the network element;

receiving a second wavelength topology map from a second adjacent network element in the optical network over a dedicated overhead wavelength channel, wherein the second wavelength topology map includes a second map portion that specifies the wavelengths being transmitted by the second adjacent network element in a second direction to the network element;

determining passthrough wavelengths in response to wavelengths transmitted in a first direction by the network element are not equal to wavelengths specified in the second wavelength topology map transmitted by the second adjacent network element in a second direction to the network element; and

determining passthrough wavelengths in response to wavelengths transmitted in a second

direction by the network element are not equal to wavelengths specified in the first wavelength topology map transmitted by the first adjacent network element in a first direction to the network element.

37 (New). The method of claim 36, further comprising:

transmitting wavelengths in the first direction to the second adjacent network element over the optical network; and

transmitting wavelengths in a second direction to the first adjacent network element over the optical network.